CHAPTER 3
AFFECTED ENVIRONMENT

This chapter describes the existing natural resources and the environmental characteristics of the proposed Tucson Electric Power Company (TEP) transmission corridors. The information and data presented in this chapter provide a baseline description of the environment against which the various alternatives from Chapter 2 are evaluated in Chapter 4. The information presented in this chapter serves as the reference point to compare the potential changes to the environment, both positive and negative.

This chapter presents information on land use and recreation, visual resources, biological resources, cultural resources, socioeconomics, geology and soils, water resources, air quality, noise, human health and environment, infrastructure, transportation, and minority and low-income populations.

3.1 LAND USE AND RECREATION

This section discusses the existing land use resources in the vicinity of the proposed project. The discussion includes land use planning, current land use, land ownership, and recreational resources.

3.1.1 Land Use

The following discussion of land use planning, current land use, and land ownership applies to all three proposed corridors. Information specific to the Western, Central, and Crossover Corridors is described separately following the general discussion.

Figure 1.1–4 shows the land ownership or management in the vicinity of the proposed project. The land ownership in the northern portion of all three corridors is primarily private and state trust land, with 1.25 mi (2.01 km) of the proposed corridors on Federal lands managed by the Bureau of Land Management (BLM). The southern portion of all three corridors includes public lands administered by the U.S. Department of Agriculture Forest Service (USFS). The proposed corridors do not cross any Indian reservations or lands reserved under treaty rights by Native American nations, tribes, or communities. The San Xavier District of the Tohono O'Odham Nation is located approximately 1 mi (1.6 km) north of the proposed corridors as they exit the South Substation.

TEP has not finalized the placement of the 125-ft (38-m) right-of-way (ROW) within the 0.25 mi (0.40 km)-wide study corridors. The precise siting of the ROW would involve input from cultural, biological, and visual specialists, after each agency has issued a Record of Decision (ROD), to identify and minimize impacts to each area of land to be disturbed.

Northern Portion. The northern portion of the three proposed corridors, including the South Substation, is located in Pima County. Pima County land development and conservation is guided by policies of the Pima County Comprehensive Plan, implemented by the County Zoning Code within unincorporated areas. The Board of Supervisors adopted the current 2001 Pima County Comprehensive Plan on December 18, 2001, in accordance with the requirements of the Growing Smarter Plus legislation, the preliminary Sonoran Desert Conservation Plan, and requirements provided for in the county Zoning Code (Pima 2003). Within the town of Sahuarita, the Planning Commission oversees a comprehensive long-term General Plan and associated zoning regulations.

All three corridors cross the same Federal lands managed by the BLM, an estimated 1.25 mi (2.01 km) of lands located 1.3 mi (2.1 km) north of the existing TEP Cyprus Sierrita Substation (see Figure 1.1–4, Township 17 South, Range 12 East). These lands are designated as disposal lands under the current Resource Management Plan (BLM 1988).

Coronado National Forest. Each of the three proposed corridors cross the Tumacacori Ecosystem Management Area (EMA), as shown in Figure 3.1–1, which consists of all of the Coronado National Forest land west of Interstate 19 (I-19) adjacent to the U.S.-Mexico border (approximately 203,800 acres [82,475 ha]). The USFS manages this land for sustained multiple use of forest and rangeland resources including timber, grazing, recreation, and mining (USFS 2001a). The specific direction for managing the Coronado National Forest is contained in the *Coronado National Forest Land and Resource Management Plan* and amendments (Forest Plan), originally approved August 4, 1986 (USFS 1986). The plan provides for integrated multiple use and sustained yield of goods and services from the forest in a way that maximizes long-term net public benefits in an environmentally sound manner.

- The section of the Western Corridor that joins the 50-ft (15-m) El Paso Natural Gas Company (EPNG) pipeline ROW and exits the Coronado National Forest approximately 2 mi (3.2 km) to the southeast, is within an existing Forest Transportation System and Utilities Corridor. USFS advises that the rest of the Western Corridor on the Coronado National Forest, an estimated 27.5 mi (44.3 km), would require a Forest Plan amendment in order to implement the alternative.

- The Central Corridor is not within the Forest Transportation System and Utilities Corridor where the Central Corridor deviates from the EPNG pipeline ROW to avoid an inventoried roadless area (IRA) for approximately 2 mi (3.2 km). USFS advises that a Forest Plan amendment would be needed before implementation of this alternative.

- The Crossover Corridor is not within an existing Forest Transportation System and Utilities Corridor, except where it follows or crosses the EPNG pipeline ROW. USFS advises that the rest of the Crossover Corridor on the Coronado National Forest, an estimated 20 mi (32 km), would require a Forest Plan amendment in order to implement this alternative.

See Section 1.2.2 for more details on the Forest Plan amendment process.

IRAs on national forest lands provide protection for all natural resources, including water, soil, flora, fauna, and air quality, and protect visual resources while providing a potential for unroaded recreation experiences. IRAs encompass approximately 52,788 acres (21,363 ha) within the Tumacacori EMA and are shown in Figure 3.1–1. The Western Corridor is located less than 1 mi (1.6 km) west and south of an IRA, and the Central Corridor passes within 0.25 mi (0.40 km) of an IRA. The Crossover Corridor passes through approximately 3 mi (4.5 km) of an IRA as it goes through Peck Canyon.

The *Roadless Area Conservation Final Rule*, to protect IRAs within the National Forest System, was delayed from adoption on January 20, 2001, after the Bush Administration requested all agencies delay all new laws and regulations not yet in effect by 60 days to give the Administration time for review (NRDC 2003). The *Roadless Area Conservation Final Rule* was then adopted effective March 13, 2001 (36 CFR Part 294). In seeking to overturn the new rule, states and industries filed six lawsuits challenging the new rule. In May 2001, a Federal judge issued an injunction, preventing the law from taking effect. In December 2002, a Federal appeals court lifted the stay on the implementation of the *Roadless Area Conservation Rule* (EMS 2002). Under the final rule, development within the IRAs, primarily related to commercial timber harvest, is limited, although the USFS Chief may allow limited development following appropriate environmental analysis and disclosure. The *Forest Service Roadless Area Conservation Final Environmental Impact Statement* (USFS 2000), which was completed in November 2000, evaluated the proposed USFS regulations to protect IRAs.

TEP has stipulated that the structure locations, construction areas, and proposed access roads for the Western and Central Corridors would not enter into IRAs. In addition, TEP has stipulated that the structure locations, construction areas, and proposed access roads for all three corridors would not enter the following specially designated areas within the Tumacacori EMA (as shown in Figure 3.1–1): Pajarita Wilderness, Chiltipene Botanical Area, and Peña Blanca Lake Recreation Area (TEP 2003). The Pajarita Wilderness is a congressionally designated area comprised of approximately 7,400 acres (3,000 ha), including Sycamore Canyon and Goodding Research Natural Area, designated for its pristine nature and wilderness values, and utilized for recreation. The Chiltipene Botanical Area is an estimated 2,840 acre (1,150 ha) reserve established for the protection and study of Chiltepin wild chilies (*Capiscum annum* var. *glabriusculum*). Peña Blanca Lake Recreation Area is used for year-round water recreation.

Current land use within the Tumacacori EMA includes diverse and dispersed recreational uses, which are described in Section 3.1.2, Recreation. The U.S. Border Patrol conducts routine surveillance in the vicinity of the U.S.-Mexico border, specifically focused on the area south of Ruby Road between the Pajarita Wilderness and Nogales, mostly within the Tumacacori EMA. U.S. Border Patrol activities generally involve accessing the ridgetops to get an open view of the area. A large portion of the Tumacacori EMA (an estimated 164,000 acres [66,400 ha]) is classified by USFS as able to support livestock grazing, and some is currently under permit for livestock grazing. A majority of this capable rangeland is in satisfactory condition (a USFS measure of the health of the vegetation and soil relative to their combined potential to produce a sound and stable biotic community) (USFS 2001b).

- The Western Corridor passes almost entirely through satisfactory rangeland within the Tumacacori EMA.

- The Central and Crossover Corridors pass through a combination of satisfactory and unsatisfactory rangeland within the Tumacacori EMA.

There are an estimated 320 mi (515 km) of USFS system roads within the Tumacacori EMA, both paved and unpaved. There are also numerous unofficial travelways used by recreational and other users of the area, known as wildcat roads, as described in Transportation Section 3.12 and the Roads Analysis (RA)(URS 2003a) for the proposed project. There are approximately 31 vehicular access points to the EMA. The current configuration of the road system serves as a "limiter" to the EMA in accordance with the Forest Plan. Ruby Road is the primary access point to the EMA, as shown in Figure 3.1–1.

Nogales Border Area. The proposed crossing of the U.S.-Mexico border would be the same for all three corridors. In the City of Nogales, where the proposed corridors connect to the proposed Gateway Substation and continue to the U.S.-Mexico border, the City of Nogales Planning and Zoning Department oversees land use. On June 25, 1897, a Presidential Proclamation was signed by President William McKinley to keep lands free from obstruction as protection against smuggling of goods between the United States and Mexico. The proclamation reserved a strip of land 60 ft (18 m) wide, parallel with and adjacent to the U.S.-Mexico border, extending 1 mi (1.6 km) east and 1 mi (1.6 km) west of Monument No. 122 within the City of Nogales, Arizona. Following a recommendation that additional lands be reserved along the boundary, President Theodore Roosevelt signed a Presidential Proclamation on May 27, 1907, reserving a 60 ft (18 m)-wide strip of land parallel with and adjacent to the U.S.-Mexico border on all lands that were not already patented (that is, Indian Reservations, National Parks, Monuments, etc.) to the United States to ensure the integrity of the 60-ft (18-m) strip of reserved land. Similar lands are also designated by Mexico along its side of the land border. The 60-ft (18-m) strip of reserved land is continuous along the United States side of the border from Nogales, Arizona westward to the Colorado River, including the area of the proposed project border crossing (USIBWC 2003). The preservation of

the reserved land's integrity is a requirement for TEP to cross the U.S.-Mexico border. TEP has committed that it would avoid construction of project structures within the 60 ft (18 m)-wide reserved lands along the U.S.-Mexico border. TEP's proposed project design is for the transmission line to cross the U.S.-Mexico border using monopole structures located at least 400 ft (120 m) away from the U.S.-Mexico border (TEP 2003).

3.1.1.1 *Western Corridor*

The Western Corridor, TEP's Preferred Alternative, extends for an estimated 65.7 mi (105 km), from the South Substation to the U.S.-Mexico border, including 9.3 mi (15.0 km) that follows or crosses the EPNG pipeline ROW, as shown in Figure 1.1–4. The length of the Western Corridor within the Coronado National Forest is 29.5 mi (47.5 km).

The Western Corridor, together with the Central and Crossover Corridors, exits the TEP South Substation located within the incorporated area of the Town of Sahuarita and proceeds westerly for an estimated 1.0 mi (1.6 km) before turning south for 1.5 mi (2.4 km). Land use in this area is a mix of undeveloped land and ranch land. The corridor turns west across I-19 and continues through Pima County to the southwest, intersecting the existing EPNG pipeline ROW. This area contains industrial properties, a low density residential area (0.2 to 0.4 residents per acre), ranch land, rural undeveloped land, and multiple expansive mine tailings piles from past and ongoing mining operations. On BLM lands, the proposed project would follow parallel to two existing TEP transmission lines (138-kV and 345-kV). The Western Corridor centerline passes approximately 0.19 mi (0.3 km) from a small group of homes along South Avenida Cinco, south of Sahuarita Road, and also approximately 0.19 mi (0.3 km) from a nearby house on West Camino del Toro. The Western Corridor turns south to parallel the EPNG pipeline ROW for an estimated 5.8 mi (9.3 km) and passes near the existing TEP Cyprus Sierrita Substation.

The Western Corridor continues south past the Cyprus Sierrita Substation then separates from the Central Corridor, continuing southwest and south and enters Santa Cruz County after approximately 10 mi (16 km), passing through primarily undeveloped land, with portions of ranch land and commercial and industrial areas. The Western Corridor enters the Coronado National Forest 6.0 mi (9.7 km) south of the Santa Cruz County line. The national forest land consists of natural vegetation set in rolling hills with steep sloped canyons. Paralleling the Pima and Santa Cruz County lines on the national forest land, the Western Corridor passes south along the west side of the Tumacacori and Atascosa Mountains, then meets and runs along the south side of Ruby Road as it turns gradually east at the Pajarita Wilderness. The Western Corridor centerline passes within approximately 1 mi (2 km) of the Pajarita Wilderness, including Goodding Research Natural Area and Sycamore Canyon. The Western Corridor centerline is approximately 2 mi (3 km) from the Chiltipene Botanical Area, and is an estimated 1.5 mi (2.5 km) south of the Peña Blanca Lake Recreation Area. The Western Corridor separates from Ruby Road west of Castle Rock, continuing south of Ruby Road until the Western Corridor intersects the Central and Crossover Corridors.

The Western Corridor, together with the Central and Crossover Corridors, continues through the national forest land, following or crossing the EPNG pipeline ROW to the southeast for several miles to the Coronado National Forest boundary. The proposed corridors exit the national forest land onto private land containing some commercial and residential development and proceed 0.5 mi (0.8 km) east to the Gateway Substation. From the Gateway Substation, the proposed corridors return to the west through private land then turn south to parallel the Coronado National Forest boundary through an area containing primarily warehouses associated with trucking operations. The proposed corridors pass within 0.35 mi (0.6 km) of a warehouse and apartments on North Mariposa Ranch Road off Arizona State Highway 189. The proposed corridors meet the U.S.-Mexico border approximately 3,300 ft (1,006 m) west of Arizona State Highway 189 in Nogales, Arizona.

3.1.1.2 *Central Corridor*

The Central Corridor extends for an estimated 57.1 mi (91.9 km), from the South Substation to the international border, including 43.2 mi (69.5 km) that follows or crosses the EPNG pipeline ROW, as shown in Figure 1.1–4. The estimated length of the Central Corridor within the Coronado National Forest is 15.1 mi (24.3 km). The Central Corridor follows the same route as the Western Corridor from the South Substation in Sahuarita to an estimated 3 mi (5 km) south of the existing TEP Cyprus Sierrita Substation. Refer to Section 3.1.1.1, Western Corridor, for a discussion of the current land use in this common segment.

The Central Corridor separates from the Western and Crossover Corridors and continues to follow the existing EPNG pipeline ROW to the south. This section passes primarily through grazing areas and land that is undeveloped.

The Central Corridor continues south following or crossing the EPNG pipeline ROW, approaching to within approximately 1.0 mi (1.6 km) west of I-19, passing Amado, Tubac, and Tumacacori. The areas in the vicinity of these towns contain housing developments and some commercial establishments. The Central Corridor centerline passes approximately 0.19 mi (0.3 km) from a house northwest of Tubac (south of Agua Linda Road), and approximately 0.1 mi (0.2 km) from approximately three houses north of Aliso Springs Road in Tubac. The Central Corridor continues approximately 2.0 mi (3.2 km) south of Tumacacori through undeveloped land, and then enters the Coronado National Forest, adjacent to the EPNG pipeline ROW. The Central Corridor centerline diverges from the EPNG pipeline ROW for an estimated 1.9 mi (3.1 km) to avoid the IRA, passes along the eastern edge of the Tumacacori and Atascosa Mountains, and then crosses Ruby Road and reaches a point northwest of the Gateway Substation where it rejoins the Western Corridor.

The Central Corridor centerline passes approximately 6 mi (10 km) east of the Pajarita Wilderness, including Goodding Research Natural Area and Sycamore Canyon. The Central Corridor centerline is approximately 1.0 mi (1.6 km) from the Chiltipene Botanical Area, and is approximately 3.0 mi (4.8 km) northeast of the Peña Blanca Lake Recreation Area.

The Central Corridor is identical to the Western Corridor from the point where they join in the Coronado National Forest to the Gateway Substation and the U.S.-Mexico border. Refer to Section 3.1.1.1, Western Corridor, for the current land use along this common segment.

3.1.1.3 *Crossover Corridor*

The Crossover Corridor extends for an estimated 65.2 mi (105 km), from the South Substation to the U.S.-Mexico border, including an estimated 17 mi (27 km) along the EPNG pipeline ROW, as shown in Figure 1.1–4. The estimated length of the Crossover Corridor within the Coronado National Forest is 29.3 mi (47.2 km). The Crossover Corridor is identical to the Western Corridor from where it exits the TEP South Substation in Sahuarita to where it separates from the Western Corridor in the Coronado National Forest. Refer to Section 3.1.1.1, Western Corridor, for a description of land use within this area.

The Crossover Corridor separates from the Western Corridor and turns east through Peck Canyon for an estimated 7 mi (11.3 km). Current land use within Peck Canyon is primarily for recreational use, as described in Section 3.1.2. The Crossover Corridor joins the Central Corridor and the EPNG pipeline ROW upon exiting Peck Canyon on the east side of the Tumacacori Mountains. The distances from the Crossover Corridor to the specially designated areas within the Tumacacori EMA, as shown in Figure 3.1–1, are the same as the distances for the Central Corridor, except the Crossover Corridor is an estimated 3.0 mi (4.8 km) south of the Chiltipene Botanical Area. The Crossover Corridor is identical to

the Central Corridor from the point where they rejoin in the Coronado National Forest to the Gateway Substation and the U.S.-Mexico border. Refer to Section 3.1.1.2, Central Corridor, for a discussion of the current land use along this common segment.

3.1.2 Recreation

The following discussion of existing recreational resources applies to all three proposed corridors. A discussion of information specific to the Western, Central, and Crossover Corridors on the Coronado National Forest is presented separately. This allows the USFS Recreation Opportunity Spectrum (ROS) tool for recreation planning and management to be used (USFS 1990).

There are no state parks, national parks, or national monuments in any of the proposed corridors. The nearest state park is the Tubac Presidio State Historic Park, located off I-19 in Tubac, approximately 6.0 mi (9.7 km) east of the Western and Crossover Corridors, and an estimated 1.5 mi (2.4 km) east of the Central Corridor, as shown in Figure 1.1–4. This park occupies 10 acres (4 ha) and is a day use only facility featuring remnants of a Spanish military fort and other historic and archaeological resources. It is further discussed in Section 3.4, Cultural Resources. There are no designated Wild and Scenic Rivers within the project vicinity. USFS determined a 5-mi (8-km) segment of Sycamore Canyon mostly within the Pajarita Wilderness to be preliminarily eligible for designation as a Wild and Scenic River (USFS 1993), although no designation has been made to date. This potentially eligible segment of Sycamore Canyon is outside the three proposed corridors, although the Western Corridor crosses Sycamore Creek north of the potentially eligible segment (see Figure 3.7–2).

Recreation activities in the vicinity of the proposed project outside the Tumacacori EMA are generally similar to those within the Tumacacori EMA, as described in the following sections. These include hiking, biking, birding, photography, rock climbing, horseback riding, and off-highway vehicle use. Birding is recognized as a frequent recreation activity in the proposed project vicinity. A number of trails leading onto the national forest land east of the Tumacacori Mountains are used for recreation. The southeastern Arizona Bird Observatory has identified 25 birding hotspots in southeastern Arizona. The two nearest to the proposed project are San Xavier del Bac Mission, approximately 10 mi (16 km) north of the South Substation, and the Buenos Aires National Wildlife Refuge, approximately 25 mi (40 km) west of the Western and Crossover Corridors, and approximately 30 mi (48 km) west of the Central Corridor (SABO 2001).

The setting in which recreation activities take place in the Coronado National Forest is analyzed using the ROS. By recognizing that people desire specific settings for recreational activities, the ROS provides a framework for understanding the characteristics that contribute to specific recreational settings. In applying the ROS, USFS classifies national forest land into one of seven major classes: (1) Urban, (2) Rural, (3) Roaded Natural, (4) Roaded Modified, (5) Semi-Primitive Motorized, (6) Semi-Primitive Non-Motorized, and (7) Primitive. Based on these classifications, the ROS identifies seven characteristics that contribute to the experiences provided by a recreational area and indicate the limits of acceptable change to each characteristic within a recreational class. These characteristics, or setting indicators, are shown in the following text box (USFS 1990).

Recreation Opportunity Spectrum Setting Indicators

Access: The type and mode of travel, such as trails or roads, with more difficulty designed into travel as one moves towards the Primitive end of the spectrum.

Remoteness: The extent to which individuals perceive themselves as removed from the sights and sounds of human activity, such as transmission lines, with primitive areas being farther removed from indications of human activity.

Social Encounters: The number and type of other recreationalists met along travelways, or camped within sight or sound of others, such as a group of hikers, with fewer interactions towards the Primitive end of the spectrum.

Visitor Management: The degree to which visitors are regulated and the level of information and services provided for visitor enjoyment, such as interpretive signs, with little or no regulation and on-site information towards the Primitive end of the spectrum.

Facilities and Site Management: The level of site development, such as foot bridges across washes, with little or no user comfort and site protection facilities towards the Primitive end of the spectrum.

Naturalness: The degree of human alterations such as trail clearings in the landscape versus undisturbed nature, with settings that are visually more natural towards the Primitive end of the spectrum. Naturalness is indicated by the Scenery Management System (SMS) Scenic Integrity Level.

Visitor Impacts: The degree of visitor use impacts on the environment, such as alterations to wildlife habitat, with little or no impacts towards the Primitive end of the spectrum.

The Tumacacori EMA is one of 12 Sky Island Mountains of national forest land within southeastern Arizona. Sky Island Mountains is a term used to denote mountain ranges that are isolated from each other by intervening valleys of grassland or desert (USFS 1999). USFS has classified all areas of the Tumacacori EMA as either Rural, Roaded Natural, Roaded Modified, Semi-Primitive Motorized, Semi-Primitive Non-Motorized, or Primitive, as shown in Figure 3.1–2. Within the Tumacacori EMA, the ROS class Semi-Primitive Motorized comprises the greatest total area, an estimated 128,519 acres (52,010 ha), out of a total of 203,799 acres (82,475 ha).

Certain setting indicators such as remoteness, access, and social encounters are impacted by operations of U.S. Border Patrol in the project vicinity. For instance, an otherwise remote area may be a common location for U.S. Border Patrol vehicle activity. Therefore, to ensure a complete ROS analysis, a general treatment of U.S. Border Patrol operations is included in this section, although these operations are not classified as a recreational activity.

3.1.2.1 *Western Corridor*

The Western Corridor includes approximately 30.0 mi (48.2 km) within the Coronado National Forest, as shown by the 0.25 mi (0.40 km)-wide study corridor in Figure 3.1–2. As described in this section, the entire length of the Western Corridor on national forest lands provides opportunities for recreation, which is currently utilized to varying degrees, including hiking, hunting, birding, photography, rock climbing, biking, horseback riding, all-terrain vehicle use, camping, picnicking, fishing, metals claim prospecting, and scenic driving on Ruby Road.

The Western Corridor crosses two areas of Semi-Primitive Motorized land (west of the Tumacacori Mountains and near Nogales) for a total of an estimated 21.3 mi (34.3 km). Along Ruby Road, the

Western Corridor crosses Roaded Modified land for approximately 7 mi (11 km) and Roaded Natural land for an estimated 1.7 mi (2.7 km). The Western Corridor passes within 0.25 mi (0.40 km) of Semi-Primitive Non-Motorized land on the west side of the Tumacacori Mountains. The number of recreational users is highest in the Roaded Natural areas, decreases beyond Peña Blanca Lake in the Roaded Modified areas, and is lowest in the Semi-Primitive Motorized areas along the western side of the Atascosa and Tumacacori Mountains. However, as described below, attributes such as the remoteness of certain areas provide a unique, highly valued experience for visitors that venture into such areas. For each ROS classified area, the current setting indicators and recreational uses are described below.

Western Corridor Roaded Natural Area. The destination of a majority of visitors to the Tumacacori EMA is Peña Blanca Lake Recreation Area, accessed by traveling west on Ruby Road to the west end of the Roaded Natural area. Roaded Natural settings are road corridors where people drive to enjoy the scenery and are often on their way to a developed site such as a picnic area. Activities at Peña Blanca Lake Recreation Area include year-round picnicking and fishing. A large percentage of the visitors to this location are from Sonora, Mexico. The resort at Peña Blanca Lake was closed in 1997, resulting in a decreased number of visitors in recent years compared to when the resort was operating. The nearby Calabasas Group Area offers camping and picnicking and is used several times a year (USFS 2002a).

Full access is provided to this area for low-clearance vehicles by the paved section of Ruby Road connecting to I-19. The remoteness of this area is limited by human activities such as other automobiles at the Peña Blanca Lake parking area and along Ruby Road. Social encounters, both on Ruby Road and at the developed lake area, are moderate to high on weekends, with encounters between multiple parties likely. Social encounters tend to decrease during the week. There are rustic facilities and evidence of site management, such as paved parking areas, picnic tables, and an electric distribution line that parallels Ruby Road east of Peña Blanca Lake. The existing naturalness of the lake area is moderate, rated per the ROS in terms of Scenic Integrity. Outside of the lake area, the existing naturalness or scenic integrity is high, as the landscape appears intact. Visitor management is slight but noticeable, with simple natural signs identifying locations such as Upper Thumb Picnic Area. Visitor impacts to the area consist of soil impacts from automobiles on roads and parking areas, and disturbances in vegetation due to footpaths.

Western Corridor Roaded Modified Area. West of Peña Blanca Lake, the area surrounding this unpaved portion of Ruby Road is classified as Roaded Modified. On the Coronado National Forest, Roaded Modified is similar to the Semi-Primitive Motorized setting, but with easier access (better roads). A large majority of visitors that go beyond Peña Blanca Lake travel on Ruby Road to destinations such as Sycamore Canyon, within the Pajarita Wilderness, and California Gulch. Activities in this area include sightseeing, birding, hiking, and rock climbing. Several smaller roads that intersect Ruby Road, such as Bear Valley Ranch Road, offer opportunities for all-terrain vehicle use. The Roaded Modified area also attracts a few herpetologists (people studying reptiles and amphibians) (USFS 2002a).

Ruby Road provides dirt road access to this Roaded Modified Area. Four-wheel drive vehicles are sometimes needed for travel on this road, depending on road and weather conditions, but generally the road does not limit access. This area is more remote than along Ruby Road east of Peña Blanca Lake, as the only evidence of human activity is the dirt road and occasional foot trails. Social encounters in this area are limited, with occasional encounters between parties likely to occur. The operations of U.S. Border Patrol agents in this area increase the likelihood of having at least a few social encounters during a visit. The only evidence of facilities or site management is the maintenance of Ruby Road. The naturalness of this area along Ruby Road is high, with human alterations limited to Ruby Road, several side roads, and foot trails. Limited road signs are the primary indication of visitor management, which is generally low in this area. Visitor impacts to the area consist of soil impacts from automobiles and all-terrain vehicles on roads, and occasional footpaths disturbing vegetation.

Western Corridor Semi-Primitive Motorized Area. Upon turning north from Ruby Road, the Western Corridor runs west of the Atascosa and Tumacacori Mountains through Semi-Primitive Motorized land to the northern boundary of the Tumacacori EMA. It also runs through Semi-Primitive Motorized land south and east of Ruby Road. Semi-Primitive Motorized settings are areas with primitive roads (that is, high clearance and four wheel drive) and trails. About 30 percent of the use of this area is by backcountry hunters. Hunting season is from August to February and includes deer, mountain lion, and quail hunting. Some all-terrain vehicles are used in this area, and the area is used daily by range permittees. The remaining recreational use includes hikers, horseback riders, and others who come to enjoy the scenery and find solitude (USFS 2002a). In addition, the U.S. Border Patrol conducts routine surveillance in this area, often accessing the ridgetops to get an open view of the area.

Access to this area is limited to roads assigned for use by high-clearance vehicles, on which traffic is normally minor, consisting of administrative, permitted, or dispersed recreation uses. This results in significantly lower visitor numbers than along Ruby Road (USFS 2002a). This area is more remote than along Ruby Road, as the only evidence of human activity are dirt roads and occasional foot trails. Social encounters in this area are very limited, with a high likelihood of not having any social encounters on some days. There is a decrease in U.S. Border Patrol activity as distance from the U.S.-Mexico border increases. The only evidence of facilities or site management is the maintenance of dirt roads and trails. The naturalness is very high, with human alterations limited to dirt roads and foot trails. Visitor management is very low in this area, limited to a few road signs. Visitor impacts to the area consist of soil impacts from automobiles and all-terrain vehicles on roads, and occasional footpaths disturbing vegetation.

Western Corridor Semi-Primitive Non-Motorized Area. The Western Corridor and/or its potential new access roads pass within 0.25 mi (0.40 km) of a Semi-Primitive Non-Motorized Area. Semi-Primitive Non-Motorized settings are areas without roads that people use for a wide variety of activities, but primarily for dispersed recreation uses. Access to this area is limited to trails, used occasionally by recreationalists such as hikers and hunters. This area is more remote than the Semi-Primitive Motorized areas, as the only evidence of human activity is occasional foot trails. Social encounters in this area are very limited, with a high likelihood of not having any social encounters on some days. U.S. Border Patrol activities in this area are likely to be reduced given the limited access. The only evidence of facilities or site management is the maintenance of trails. The naturalness is very high, with human alterations limited to trails. Visitor management is virtually non-existent, and visitor impacts to the area consist of soil impacts and vegetation disturbances from footpaths.

3.1.2.2 *Central Corridor*

The Central Corridor includes an estimated 15.1 mi (24.3 km) within the Coronado National Forest, as shown by the 0.25 mi (0.40 km)-wide study corridor in Figure 3.1–2. The Central Corridor crosses Semi-Primitive Motorized land for an estimated 14 mi (23 km), and crosses Roaded Natural land for an estimated 1.1 mi (1.8 km) upon crossing Ruby Road and then runs through Semi-Primitive Motorized land to the Coronado National Forest boundary. The Central Corridor passes briefly within 0.25 mi (0.40 km) of a Semi-Primitive Non-Motorized Area north of Ruby Road. A number of roads leading onto the national forest land east of the Tumacacori Mountains are used for recreation such as hiking, birding, photography, biking, horseback riding, and all-terrain vehicle use. Rock Corral Canyon Road, popular for biking, is crossed by the Central Corridor an estimated 1.0 mi (1.6 km) outside (east) of where the road enters the national forest. Beyond these roads, there is limited use of the national forest land east of the Tumacacori Mountains, especially compared to the use along Ruby Road and at Peña Blanca Lake farther to the south (USFS 2002a). For each ROS classified area, the current setting indicators and recreational uses along the Central Corridor are described below.

Central Corridor Roaded Natural Area. The Roaded Natural Area crossed by the Central Corridor is a 1.0 mi (1.6 km) strip of land at the crossing of Ruby Road. Full access is provided to this area for low-clearance vehicles by the paved section of Ruby Road leading from I-19, and by dirt access roads to the EPNG pipeline ROW. The remoteness of this area is limited by the automobiles on Ruby Road. Social encounters on Ruby Road are moderate to high, increasing on weekends, with encounters between multiple parties likely. The rustic facilities and evidence of site management are the Ruby Road and signs along the road, and an electrical distribution line on wooden poles paralleling Ruby Road. The existing naturalness is high, as the landscape appears intact. Visitor management is slight but noticeable, with simple natural signs identifying locations such as the national forest boundary. Visitor impacts to the area consist of soil impacts from automobiles on side roads, and disturbances in vegetation due to footpaths.

Central Corridor Semi-Primitive Motorized Areas. Access to the Semi-Primitive Motorized Area comprising most of the Central Corridor is limited to primitive roads assigned for use by high clearance and four wheel drive vehicles, on which traffic is normally minor, consisting of administrative, permitted, or dispersed recreation uses. Many of these roads also provide access to the existing EPNG pipeline ROW within the Central Corridor. The remoteness of this area is limited by the overlooking views of the Santa Cruz Valley and I-19 that is within 1.0 mi (1.6 km) of the Central Corridor where it enters the national forest land, and a maximum of approximately 5.0 mi (8.0 km) from the Central Corridor. Social encounters in this area are limited, with the likelihood of having a few social encounters increasing on the weekends. There is a decrease in U.S. Border Patrol activity as the distance from the U.S.-Mexico border increases. The only evidence of facilities or site management is the maintenance of dirt roads and trails. The naturalness is very high, with human alterations only apparent along the EPNG pipeline ROW, and limited dirt roads and foot trails. Visitor management is very low in this area, limited to a few signs. Visitor impacts to the area consist of soil impacts from automobiles and all-terrain vehicles on roads, and occasional footpaths disturbing vegetation.

Central Corridor Semi-Primitive Non-Motorized Area. The Central Corridor and/or its potential new access roads pass briefly within 0.25 mi (0.40 km) of a Semi-Primitive Non-Motorized Area. Semi-Primitive Non-Motorized settings are areas without roads that people use for a wide variety of activities, but primarily for dispersed recreation uses. Access to this area is limited to trails, used occasionally by recreationalists such as hikers. This area is more remote than the Semi-Primitive Motorized areas, as the only evidence of human activity is occasional foot trails. Social encounters in this area are very limited, with a high likelihood of not having any social encounters on some days. U.S. Border Patrol activities in this area are reduced given the limited access. The only evidence of facilities or site management is the maintenance of trails. The naturalness is very high, with human alterations limited to trails. Visitor management is virtually non-existent, and visitor impacts to the area consist of soil impacts and vegetation disturbances from footpaths.

3.1.2.3 *Crossover Corridor*

The Crossover Corridor includes an estimated 29.7 mi (47.8 km) within the Coronado National Forest, as shown by the 0.25 mi (0.40 km)-wide study corridor in Figure 3.1–2. The Crossover Corridor crosses Semi-Primitive Motorized land for an estimated 25.2 mi (40.6 km) on the east and west sides of the Tumacacori Mountains and south and east of Ruby Road, Semi-Primitive Non-Motorized land for an estimated 3.3 mi (5.3 km) within Peck Canyon, and Roaded Natural land for an estimated 1.1 mi (1.8 km) upon crossing Ruby Road. On the west side of the Tumacacori Mountains (in the segment common with the Western Corridor), recreational use consists of backcountry hunters, hikers, horseback riders and others who come to enjoy the scenery and find solitude. The U.S. Border Patrol conducts routine surveillance in this area, often accessing the ridgetops to get an open view of the area. Within Peck Canyon, recreation is more limited, but offers a favorite setting for some hikers, birders, hunters, horseback riders, and all-terrain vehicle users (USFS 2002a). On the east side of the Tumacacori

Mountains, a number of trails and roads (for high clearance and four wheel drive vehicles) offer recreation, as described above for the Central Corridor. For each ROS classified area, the current setting indicators and recreational uses along the Crossover Corridor are described below.

Crossover Corridor Roaded Natural Area. The Roaded Natural Area crossed by the Crossover Corridor is a 1.0 mi (1.6 km) strip of land at the crossing of Ruby Road. This segment is common with the Central Corridor Roaded Natural Area, and the ROS setting indicators are the same as previously described for this area.

Crossover Corridor Semi-Primitive Motorized Areas. Access to the Semi-Primitive Motorized Areas on the west and east sides of the Tumacacori Mountains is limited to primitive roads assigned for use by high clearance and four wheel drive vehicles, on which traffic is normally minor. Many of the roads on the east side of the Tumacacori Mountains also provide access to the existing EPNG pipeline ROW within the Crossover Corridor. The area west of the Tumacacori Mountains is very remote, given the distance to major roads such as Ruby Road and Arivaca Road. Sights and sounds of human activity are limited or non-existent. On the east side of the Tumacacori Mountains, the remoteness is limited by the overlooking views of the Santa Cruz Valley and I-19, as described for the Central Corridor. West of the Tumacacori Mountains, social encounters are very limited, with a high likelihood of not having any social encounters on some days, whereas social encounters would be more likely east of the Tumacacori Mountains. U.S. Border Patrol activities along the Crossover Corridor are limited given the distance from the U.S.-Mexico border. The only evidence of facilities or site management is the maintenance of dirt roads and trails. The naturalness is very high, with human alterations only apparent along the EPNG pipeline ROW. Visitor management is very low in this area, limited to a few signs. Visitor impacts to the area consist of soil impacts from automobiles and all-terrain vehicles on roads, and occasional footpaths disturbing vegetation.

Crossover Corridor Semi-Primitive Non-Motorized Area. The Crossover Corridor and its potential new access roads pass through Semi-Primitive Non-Motorized land in Peck Canyon. Within Peck Canyon, recreation is limited, but offers a favorite setting for some hikers, birders, hunters, horseback riders, and all-terrain vehicle users (USFS 2002a). Access to this area is on a trail that goes several miles into Peck Canyon from the east side. There are also remnants of a trail from a water pipe that used to supply water to the town of Ruby located several miles west of the proposed project. This area is more remote than the Semi-Primitive Motorized areas east of the Tumacacori Mountains, as the only evidence of human activity is occasional foot trails. Social encounters in this area are very limited, with a high likelihood of not having any social encounters on some days. U.S. Border Patrol activities in this area are likely to be reduced given the limited access and distance to the U.S.-Mexico border. The only evidence of facilities or site management is the maintenance of trails. The naturalness is very high, with human alterations limited to trails. Visitor management is virtually non-existent, and visitor impacts to the area consist of soil impacts and vegetation disturbances from footpaths.